TRAFFIC ENGINEERING DIVISION

MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION

Policy/Procedure Guideline

SECTION 4: Traffic Signals

SUBJECT 4.1: Traffic Signal Design

EFFECTIVE DATE: 8/3/92

PARAGRAPH:

1. PURPOSE:

To design traffic signals which when justified provide for the safe and efficient traffic and pedestrian flow at intersections, along routes, and in street networks.

2. DESCRIPTION:

The procedures for the design of traffic signals.

a. Preliminary Activities
   1. Create a project folder.
   2. Check for existing roadway plans and research the right-of-way and city limits (in Traffic and Central Files).
   3. Call for early blue stake.
   4. Conduct field investigations, topo' geometry and utility locations.
   5. If additional pavement is needed meet with Engineering Division for feasibility of work being a contract construction project (document meeting in writing).
   6. If additional right-of-way may be needed meet with Real Estate Division.
   7. If new pavement is to be installed by the Operations Division meet with them to determine schedule and costs

(document meeting in writing).
8. Contact any impacted government agencies with right-of-way at the intersection.
9. Stop existing restripe.

b. Design Phase
1. Using computer aided drafting and design (CADD) Microstation software, layout geometric and striping/signing plan.
2. If additional right-of-way is required send final requirements to Real Estate Division in writing.
3. Send Geometric layout to Engineering Division for drainage review for all projects.
4. Calculate cost estimation using program developed with nutshell software.
5. Create work order number and give to accounting / payroll section.
6. Write board agenda item &/or intergovernmental agreement (IGA).
7. Meet with utility representative at site approximately 90 days before anticipated turn-on date
8. Using (CADD) Microstation software develop underground layout of traffic signal including all utilities.
9. Using (CADD) Microstation software develop aboveground layout of traffic signal.
10. Write electrical service request letter to utility company 60 days before anticipated turn-on date when possible.

c. Construction Phase
1. Request striping work order and review striping layout with striping section supervisor.
2. Give traffic signal construction plans to signal section supervisor for distribution to assigned construction crew.
3. Visit project site during construction.
4. Work up signal timing and have system timing developed if applicable.
5. If required by utility company write meter certification letter.

d. Closing out project - Record keeping activities
1. Notify accident analysis section of turn-on date.
2. Establish maintenance work order number with accounting / payroll section.
3. Ask studies section to give intersection final check.

4. If required write letter to utility company regarding turn-on date.
5. Give information for signal and luminaire inventory to Traffic Division Administrative Support Section.
6. If applicable check if IGA has been recorded.
7. Make as-built changes to plans and print copies for signal maintenance and operation.